

CLAIMS:

1. A method of recording data in the form of marks and for erasing recorded marks in an information layer of a record carrier by irradiating the information layer by means of a pulsed radiation beam, a recorded mark being erased by a sequence of erase pulses (31, 32), said information layer having a phase reversibly changeable between a crystalline phase and an amorphous phase,
characterized in that at least one of the erase pulses in said sequence of erase pulses (31, 32) has an erase power level which is decreasing with time.
2. Method as claimed in claim 1,
10 wherein at least one of the erase pulses in said sequence of erase pulses (31, 32) consists of n portions, n being an integer number larger than 1, the i-th portion having an i-th erase power level, i being an integer number in the range between 1 and n, the i-th portion preceding the (i+1)-th portion, and wherein the i-th erase power level is higher than the (i+1)-th erase power level.
- 15 3. Method as claimed in claim 2,
wherein at least one of the erase pulses in the said sequence of erase pulses (31, 32) consists of n portions of substantially the same duration.
- 20 4. Method as claimed in claim 1,
wherein at least one of the erase pulses in said sequence of erase pulses has an erase power level which is continuously decreasing with time.
- 25 5. Method as claimed in claim 1,
wherein all erase pulses in said sequence of erase pulses (31, 32) have an erase power level which is decreasing with time.
6. Method as claimed in claim 1,
wherein all erase pulses in one sequence of erase pulses (31, 32) are identical.

7. Method as claimed in claim 1,
wherein the front portions of the erase pulses (42) in one sequence of erase pulses have different erase power levels.

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8. Method as claimed in claim 1,
wherein the time dependency of the erase power level of the at least one erase pulse is dependent on properties of the record carrier and the erasing velocity.

10 9. An optical recording device for recording data in the form of marks and for erasing recorded marks in an information layer of a record carrier by irradiating the information layer with a pulsed radiation beam, said information layer having a phase reversibly changeable between a crystalline phase and an amorphous phase, the device comprising a radiation source for providing the radiation beam and a control unit operative
15 for controlling the power of the radiation beam and for providing a sequence of write pulses (21, 22) for recording the marks and a sequence of erase pulses (31, 32) for erasing recorded marks,
characterized in that the control unit is operative for controlling the power of the radiation beam for erasing a recorded mark such that at least one of the erase pulses in said sequence of
20 erase pulses (31, 32) has an erase power level which is decreasing with time.

10. A method of reading data recorded in the form of marks and spaces in an information layer of a record carrier by irradiating the information layer by means of a sequence of read pulses (71) of a pulsed radiation beam, said information layer having a phase reversibly changeable between a crystalline phase and an amorphous phase,
25 characterized in that at least one of the read pulses in said sequence of read pulses (71) has a read power level which is decreasing with time.

11. Method as claimed in claim 10,
30 wherein at least one of the read pulses in said sequence of read pulses (71) consists of n portions, n being an integer number larger than 1, the i-th portion having an i-th read power level, i being an integer number in the range between 1 and n, the i-th portion preceding the (i+1)-th portion, and wherein the i-th read power level is higher than the (i+1)-th read power level.

12. Method as claimed in claim 11,
wherein at least one of the read pulses in the said sequence of read pulses (71) consists of n
portions of substantially the same duration.

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13. Method as claimed in claim 10,
wherein at least one of the read pulses in said sequence of read pulses (71) has a read power
level which is continuously decreasing with time.

10 14. A method as claimed in claim 10,
wherein all read pulses in said sequence of read pulses (71) have a read power level which is
decreasing with time.

15. 15. Method as claimed in claim 10,
wherein all read pulses in one sequence of read pulses (71) are identical.

16. 16. Method as claimed in claim 10,
wherein the front portions of the read pulses in one sequence of read pulses have different
read power levels.

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17. 17. Method as claimed in claim 10,
wherein the time dependency of the read power level of the at least one read pulse is
dependent on properties of the record carrier and the reading velocity.

25 18. An optical recording device for reading data recorded in the form of marks and
spaces in an information layer of a record carrier by irradiating the information layer by
means of a sequence of read pulses (71) of a pulsed radiation beam, said information layer
having a phase reversibly changeable between a crystalline phase and an amorphous phase,
the device comprising a radiation source for providing the radiation beam and a control unit
30 operative for controlling the power of the radiation beam and for providing a sequence of
read pulses for reading the information,
characterized in that the control unit is operative for controlling the power of the radiation
beam for reading the information such that at least one of the read pulses in said sequence of
read pulses (71) has a read power level which is decreasing with time.